

538, 624

Rec'd PCT/PTO 10 JUN 2005

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
24 June 2004 (24.06.2004)

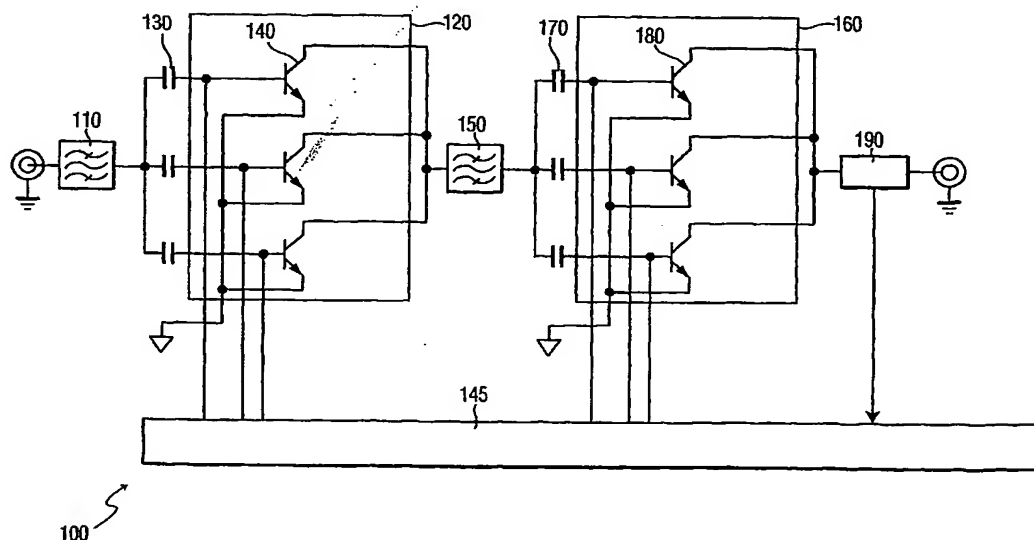
PCT

(10) International Publication Number
WO 2004/054095 A1

- (51) International Patent Classification⁷: **H03F 1/32**
- (21) International Application Number:
PCT/IB2003/005881
- (22) International Filing Date:
10 December 2003 (10.12.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
60/432,896 12 December 2002 (12.12.2002) US
- (71) Applicant (for all designated States except US): **KONINKLIJKE PHILIPS ELECTRONICS N.V.** [NL/NL]; Groenewoudseweg 1, NL-5621 BA Eindhoven (NL).
- (72) Inventors; and
- (73) Inventors/Applicants (for US only): **OSMAN, Saleh** [US/US]; P.O. Box 3001, Briarcliff Manor, NY 10510-8001 (US). **KEENAN, Richard, F.** [US/US]; P.O. Box 3001, Briarcliff Manor, NY 10510-8001 (US). **LUCEK, Jaroslaw** [US/US]; P.O. Box 3001, Briarcliff Manor, NY 10510-8001 (US).
- (74) Common Representative: **KONINKLIJKE PHILIPS ELECTRONICS N.V.**; c/o Biren, Steven, P.O. Box 3001, Briarcliff Manor, NY 10510-8001 (US).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Declaration under Rule 4.17:**
— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for all designations.

[Continued on next page]

(54) Title: PRESERVING LINEARITY OF AN ISOLATOR-FREE POWER AMPLIFIER BY DYNAMICALLY SWITCHING ACTIVE DEVICES



(57) **Abstract:** An amplifier circuit (100) includes a driver stage (120) with active devices (140) for pre-amplification and output of a pre-amplified signal; and an output stage (160) with active devices (180) for further amplification of the pre-amplified signal and output of an amplified signal. A detector (190) measures levels of forward and reflected parts of the amplified signal, and a control circuit (145) independently and selectively controls turning on and off of the active devices (140, 180) of the driver and output stages (120, 160) as a function of the levels of the forward and reflected signals to substantially maintain linearity of the amplifier circuit (100) with load variations.

WO 2004/054095 A1